

REMARKS/ARGUMENTS

Claims 1-40 are pending in this application. Claims 8-20 are withdrawn from consideration. Claims 1-7 and 21-40 are rejected. Claims 1 and 37 are amended, which amendment does not add any new matter into the application. The Examiner is respectfully requested to reconsider and withdraw the rejections of the claims on the basis of the amendments and remarks submitted herewith to enable this application to proceed to issuance.

Election/Restrictions

The Examiner acknowledged applicants' election of the Group I claims in the reply filed on 11 April 2005. Claims 8-20 have been withdrawn from further consideration as being directed to a non-elected invention.

Claim Rejections Under 35 U.S.C. §112

Claims 1-7 and 37-40 are rejected under 35 U.S.C. 112, first paragraph. According to the Office Action the specification, while being enabling for a fluid repelling agent comprising a solvent in addition to the UV coloring agent and the fluorine-based polymer, does not reasonably provide enablement for a fluid repelling agent that does not comprise a solvent. The Office Action further states that it appears from the instant specification (p. 9, paragraph 0038) that the reduction of outgas is, at least in part, a result of the baking process for removing the solvent; thus, the presence of the solvent appears to be critical to the practice of the invention. This rejection is respectfully traversed.

In response to the §112, ¶1 "non-enablement" rejection, applicants have amended independent claims 1 and 37 to recite the presence of a solvent in the claimed oil repelling agent. These amendments are completely supported by the application as filed and thus they do not add any new matter. The amendments are believed to overcome the basis for the rejection of claims 1-7 and 37-40 and the Examiner is, therefore, respectfully requested to reconsider and withdraw the subject rejections.

Claim Rejections Under 35 U.S.C. §102/103

Claims 23-36 are rejected under 35 U.S.C. §102(b) as anticipated by, or in the alternative under 35 U.S.C. §103(a) as obvious over Miura et al. (JP 2001-27242). According to the Office Action, the subject reference discloses a dynamic pressure-bearing device for use, e.g., in a hard disc

drive, provided on portions of its surface with an oil repelling agent. Further according to the Office Action, the oil repelling agent comprises a fluorinated resin, corresponding to the instant fluorine-based polymer (as recited in applicants' claims) and a fluorescent agent, corresponding to the instant UV coloring agent.

The Office Action admits, however, that in contrast to applicants' rejected claims, Miura et al do not teach the concentration of the fluorescent agent or fluorinated resin in the oil-repellant agent composition. As explained below, the Examiner tries to pass off this distinction as being of no account. However, the assumption relied upon by the Examiner to support his conclusion is, as further explained below, patently incorrect and therefore the claim rejection is entirely without foundation. Thus, it should be withdrawn.

In summary, the Examiner argues that, although Miura et al. do not teach the concentration of the fluorescent agent or fluorinated resin in the oil repellent agent composition, these concentrations relate to the amounts contained in the oil repelling agent, while the claims are directed to "bearing components" (emphasis supplied by applicants). The Examiner goes on to state that the oil repelling agent is not present in the articles of claims 23-36 because the oil repelling agent comprises a solvent, which solvent is removed to form the oil repelling film. Finally, the Examiner notes that, "[t]he concentration of UV agent and fluorine-based polymer in the resulting bearing device cannot be determined simply from the concentrations in the coating composition since the claims do not specify an amount of coating applied or other possible constituents in the coating composition. Moreover, the concentration of a component in a solution is unrelated to the concentration of the component in a coating formed from the solution. . . . Therefore, the limitations in claims 23 and 30 specifying the concentration of UV coloring agent in the solvent containing oil repelling agent does not limit the concentration of UV coloring agent in the coating."

Applicants respectfully traverse the Examiner's grounds for rejection and submit that they believe that the rejection is based on a misinterpretation of what is actually recited in their claims. The grounds upon which the Examiner's rejection is based may be briefly summarized as follows: (1) the cited reference does not teach the concentrations of either the fluorescent agent or the fluorinated resin used in the oil-repelling agent described therein; (2) applicants' claims, particularly independent claims 23 and 30, do recite these values that are missing from the prior art; (3) however, the values set forth in the claims relate to the oil repelling agent, while the claims are directed to articles, i.e., bearing components - and the agent is not present in the articles of claims

23-36 because the agent comprises a solvent, which is removed to form the oil-repelling film upon the articles.

Applicants completely agree with the Examiner as to points 1 and 2 above. However, as to point no. 3, the Examiner is respectfully requested to consider the following which, it is believed, will establish that the Examiner's position is not well grounded. Applicants claim a bearing component upon which an oil repelling film is produced. The film comprises, *inter alia*, a UV agent and a fluorine-based polymer. The concentrations of these materials in the film are not what is recited in, e.g., claims 23 and 30, however. Instead, these claims include a recitation of the concentrations of the UV agent contained in the oil repelling agent used in creating the film upon the bearing component. Additionally, the concentration of the fluorine based polymer in the agent is recited in certain of the claims depending from independent claims 23 and 30. It is totally irrelevant to a comparison between the claims and the cited Miura et al. reference that the oil repelling agent is subsequently heated in order to drive off the solvent and thus form the oil repelling film upon the bearing component. What is relevant to the issue at hand is what is actually recited in the claims. Claims 23 and 30 describe a film formed from an agent, wherein the agent includes (comprises) about 100 PPM to 400 PPM of a UV coloring agent. The benefits attributable to maintaining the claimed level of UV coloring agent in the oil repelling agent are described throughout applicants' specification, most particularly in the Examples provided therein. Further, claims 24 and 31, which depend, respectively, from claims 23 and 30 and thus contain all of the recitations of those claims, recite a specific concentration range for the fluorine-based polymer as contained in the oil repelling agent (not the resultant film). As admitted by the Examiner on p. 3 of the present Office Action, "Miura et al. do not teach the concentration of the fluorescent agent or the fluorinated resin in the oil-repellant agent composition." Applicants submit, therefore, that the subject reference neither anticipates, nor renders obvious, the invention recited in any of claims 23-36. The Examiner is thus requested to reconsider and withdraw the rejection of the subject claims under 35 U.S.C. §102(b)/§103 (a).

Claim Rejections Under 35 U.S.C. §103

Claims 1, 2, 5-7, 37 and 38 are rejected under 35 U.S.C. §103(a) over the Miura et al. reference described above. The Examiner again notes that Miura et al. does not teach the concentration of the fluorescent agent in the oil repellant agent composition. To support his

rejection, the Examiner argues that (1) Miura et al. teach that a coloring agent is added to allow for visual recognition of the coating; (2) the amount of coloring agent directly affects the degree of coloration of the product to be colored, i.e, the amount of coloring agent is a results effective variable; and (3) therefore, it would have been obvious to one of ordinary skill to optimize the amount of fluorescent agent in the coating composition of Miura et al., since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Applicants respectfully traverse the Examiner's rejection for the reasons which follow.

Page 2, first paragraph of the translation of Miura et al. describes the problem to be solved by the reference and how the problem is overcome. The reference clearly teaches that the problem to be solved is that of permitting an observer to immediately recognize the "coated state" of an oil repelling agent applied to a dynamic pressure bearing device, by permitting the observer to carry out an inspection of the coated part(s) so as to confirm the presence or absence of the oil-repellant agent upon certain components of the device. The desired result is achieved by adding a coloring agent or fluorescent agent to the oil repelling agent. Thus, Miura et al. clearly were adding a coloring agent or fluorescent agent to the oil-repellant agent for the purpose of optimizing the visual recognition of the coating.

As pointed out in applicants' previous response filed April 11, 2005, however, what the Examiner has failed to recognize is that applicants did not choose the concentration range of the UV coloring agent recited in their claimed compositions for the purpose of optimizing the visual recognition of the coating. Rather, the concentration range was chosen for the purpose of reducing the outgas generated by the coating composition of the invention. As taught, for example, in Paragraph [0010] of applicants' specification, outgas may be generated, for example, by heat generated during operation of a hard disc drive, and by evaporation. Increased outgas adversely affects the reliability of the hard disc drive. Further, outgas may reduce the useful area of the magnetic disc and the density of the memory surface of the magnetic head. Applicants' success in reducing such outgas is clearly demonstrated in the Examples provided with the specification. See, in particular, Table 1 on page 13 and Table 2 on page 15 of the application.

In contrast with the present invention, the Miura reference displays no recognition of the problems inherent in the generation of excess outgas, nor that such outgas production should be reduced if not entirely eliminated. More particularly, the reference contains no disclosure which would teach or suggest to one skilled in this art that outgas producing the negative results described

above (and in ¶10 of applicants' specification) could be significantly reduced by limiting the concentration of the UV coloring agent to 100-400 PPM, as recited, e.g., in claims 1 and 37. Thus, applicants' incorporation of a specific range of concentration of the UV coloring agent is not a case of simply determining an optimum value of a result effective variable. Rather, it involves the discovery by applicants of the relationship between outgas production and UV coloring agent concentration, coupled with the recognition of concentration ranges best calculated to reduce (or eliminate) the problem of outgas production, which problem is not even recognized by the cited Miura reference.

The Examiner, however, continues to maintain his rejection despite the significant differences between applicants' invention and the prior art described above. On p. 8 of the present Office Action he states that applicants' arguments are not persuasive, "because visual inspection is explicitly cited in the instant application as a criterion for establishing the amount of UV coloring agent in the oil repelling agent (see page 10, paragraph 0041)." Applicants submit, however, that the teaching which the Examiner cites is taken completely out of context, which thus has caused him to misinterpret applicants' reasons for maintaining the concentration of the UV coloring agent within a range of from about 100 PPM to about 400 PPM as recited, e.g., in claims 1 and 3, or from about 150 PPM to about 300 PPM as set forth in claim 38.

The disclosure contained in applicants' paragraph 0041 must be taken in the context of the remaining description by applicants of their invention as found in the specification (see discussion below), which leads inescapably to the conclusion that the purpose of maintaining the claimed range of the UV coloring agent at a level below 400 PPM as recited in applicants' claims is to markedly reduce the amount of outgas caused due to the transformation of the agent into a film on the surface of a coated object, such as a bearing component. As taught, for example, in paragraph 0042 of applicants' specification, "It has been found, however, that the quantity of outgas in such an oil repelling film [i.e, with >400 PPM of the UV coloring agent] is markedly larger than an oil repelling film formed from an oil repelling agent containing less than 400 PPM of the UV coloring agent, and in particular less than about 300 PPM of the UV coloring agent." [See, e.g, Table 1 on p. 13 and Table 2 on p. 15 of applicants' specification].

The importance of the above-discussed distinction is further highlighted in accordance with the teachings contained in paragraphs 0009 and 0010 of applicants' specification. Paragraph 0009 identifies the Miura et al. reference as prior art to applicants' invention and indicates that the

reference proposes a solution to improve the visual examination of the quality of a coating of an oil repelling agent and the quality of the film formed from such an agent, which solution called for using a coloring agent to facilitate visual examination. Applicants go on to teach, in paragraph 0010 however, that although the solution proposed by Miura et al. may improve the visual examination of the quantity of the oil repelling film, applicants determined that the coloring agent in the proposed oil repelling agent generates a quantity of outgas than is markedly larger in volume than the outgas generated from other conventional oil repelling films. Following a discussion of the adverse effects of such outgas, applicants additionally stated that, "It is, therefore, desirable, to produce a dynamic pressure device, such as a fluid dynamic pressure bearing device, with a reduced amount of generated outgas."

It is thus apparent, once one views applicants' teachings as a whole, that, notwithstanding applicants' teaching in paragraph 0041 to include at least about 100 PPM of the UV coloring agent to permit visual inspection of the coated part, the crux of applicants' invention is the reduction in outgas production which is achieved, as taught in applicants' specification, by use of an oil repelling agent having < about 400 PPM of the UV coloring agent. This feature, which is nowhere taught or even suggested in the Miura et al. reference, is contained in applicants' rejected claims and thus those claims are believed to be distinguishable over the cited reference. The Examiner is, therefore, respectfully requested to reconsider and withdraw the §103(a) rejection based on Miura et al.

Further to the above, claims 1-7, 21-24, 27, 28, 30, 31, 34, 35 and 37-40 are rejected under 35 U.S.C. §103(a) over Yokouchi et al U.S.Patent No. 6,582,130 in view of Miura et al. The Examiner cites Yokouchi et al. due to its disclosure of a bearing device comprising a rust preventative film made of an oil repellant material. The Examiner acknowledges, however, that the reference does not teach the addition of a UV coloring agent or an organic pigment to the rust preventative film. The Examiner has, therefore, combined Miura et al. with the Yokouchi et al patent due to the disclosure in Miura et al. to incorporate an organic dye or a fluorescent agent, such as a compound of the coumarin system, into the fluorinated coating to allow for immediate visual recognition of coated parts. Further according to the Examiner, one skilled in the relevant art would be motivated to add such a fluorescent agent to the rust preventative coating of Yokouchi et al. as a means for determining whether a part has been coated. As in the case of the §103 rejection over Miura et al. discussed above, the Examiner holds that since the amount of coloring agent directly affects the degree of coloration, the amount of this agent is a results oriented variable and thus it

would have been obvious to optimize the amount of this material contained in the formulation as claimed by applicants.

This rejection thus rests on the same premise as that described above based solely on the Miura et al. reference. That is, the Examiner has taken the position that it would be obvious to "optimize" the amount of the UV coloring agent contained in the formulation as claimed by applicants. Applicants submit, however, as indicated in their prior response filed April 11, 2005, that Miura et al utilize the UV coloring agent for the purpose of visualizing the coating whereas, in the present invention, the most important feature is to reduce the production of outgas, which reduction is achieved by keeping the amount of the UV coloring agent in the oil repelling agent at a level below 400 PPM. There is no recognition anywhere in Miura et al. of the importance of lowering the levels of such outgas and applicants thus respectfully submit that the reference, whether taken alone or in combination with Yokouchi et al., would neither teach nor suggest this claimed aspect of applicants' invention to one of ordinary skill in the relevant art.

For the reasons above, therefore, applicants respectfully request the Examiner to reconsider and withdraw the rejection of the subject claims under § 103 over the combination of Yokouchi and Miura et al.

Summary

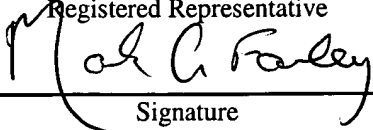
Applicants submit that the amendments and arguments provided above are believed to completely distinguish the claims of their invention over all of the cited prior art and thus the claims are now in condition for allowance, early notice of which would be appreciated.

If the Examiner believes that an interview would be useful in advancing the prosecution of this application, he is respectfully invited to telephone applicants' representative at the number provided below.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on September 27, 2005:

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Name of applicant, assignee or
Registered Representative

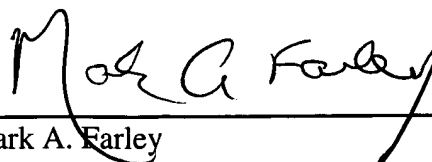


Signature

September 27, 2005

Date of Signature

Respectfully submitted,



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